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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,816	09/06/2006	Samuel Boutin	294680US2X PCT	4709
22850	7590	09/30/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER ORTIZ RODRIGUEZ, CARLOS R	
			ART UNIT 2123	PAPER NUMBER
			NOTIFICATION DATE 09/30/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Notice of Allowability

## Application No.

10/591,816

## Examiner

CARLOS ORTIZ RODRIGUEZ

## Applicant(s)

BOUTIN, SAMUEL

## Art Unit

2123

### - The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/06/2010.
2. ☒ The allowed claim(s) is/are 1-8 and 10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

**DETAILED ACTION**

1. Claims 1-8 and 10 are pending.
2. Claims 9 and 11 are cancelled.

***Continued Examination Under 37 CFR 1.114***

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/06/2010 has been entered.

***Examiner's Amendment***

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
5. Authorization for this examiner's amendment was given during a telephone interview with Derek Benke on 09/21/2010.

The application has been amended as follows:

6. Claim 1 has been replaced with the following:

- - A method of designing a validation environment for a service implemented by an embedded electrical system, the method including:

assigning to said service one or more user requests and system responses of the electrical system;

assigning to said service a behavioral automata, said behavioral automata fixing allowed sequencing of said user requests and said system responses;

automatically generating a skeleton validation environment for said service, in the form of a program executable on a simulation tool, said skeleton validation environment including a testing automata produced from a traversal of said behavioral automata, a model of initial conditions, models of said user requests, models of system response accuracy, an environmental model and dataflow and control flow which assemble said models together, and said skeleton validation environment covering all user requests and resultant system responses of said service; and

recording said skeleton validation environment in a computer readable memory device for use by a design validation tool. - -

7. Claim 2 has been replaced with the following:

- - A method according to claim 1, including assigning to each user request a function implementing each user request and assigning to each system response one or more functions implementing each system response, a dataflow of said skeleton validation environment being built using said functions of user request and system response. - -

8. Claim 3 has been replaced with the following:

- - A method according to claim 2, including assigning to said service a black box interface, the black box interface includes an input and output which correspond to an input and output of at least one of the functions of user request and system response implementing the service, and interfacing the output of said service black box with a skeleton input and a skeleton output with the input of said service black box and completing and correcting skeleton and service specification in a simulation environment to yield a validation result. - -

9. Claim 4 has been replaced with the following:

- - A method according to claim 3, including outputting a validated model which includes the skeleton validation environment for said service and a validated model of the service. - -

10. Claim 5 has been replaced with the following:

- - A method according to claim 1, including substituting a model of the service with a software implementation of the model. - -

11. Claim 6 has been replaced with the following:

- - A method according to claim 1, including substituting a model of the service with a software and hardware implementation of the model and embedding said

skeleton validation environment on a testing platform interfaced with said hardware implementation. - -

12. Claim 7 has been replaced with the following:

- - A method according to claim 1, including a systematic injection of faults for all replicated objects in a fault tolerant system, which includes a brake-by-wire system in a vehicle. - -

13. Claim 8 has been replaced with the following:

- - A method according to claim 1, including assigning a skeleton validation environment for several services sharing at least one user request and mixing said skeleton validation environments of said service implemented by an embedded electrical system to yield a validation environment for said several services. - -

14. Claim 10 has been replaced with the following:

- - A non-transitory computer readable storage medium including program code stored thereon for performing the method of claim 1 when said program code is run on a computer including a processor. - -

***Allowable Subject Matter***

15. Claims 1-8 and 10 are allowed.

16. The following is an examiner's statement of reasons for allowance:

While **Kita** (U.S. Patent No. 5,394,347) discloses assigning to said service one or more user requests and system responses of the electrical system, assigning to said service a behavioral automata, said behavioral automata fixing allowed sequencing of said user requests and said system responses; and **Giusto**, Paolo et al., "Automotive Virtual Integration Platforms: Why's, What's, and How's", IEEE 2002 discloses a systematic injection of faults for all replicated objects in a fault tolerant system, none of these references taken either alone or in combination with the prior art of record disclose a method of designing a validation environment, including:

(Claim 1) "automatically generating a skeleton validation environment for said service, in the form of a program executable on a simulation tool, said skeleton validation environment including a testing automata produced from a traversal of said behavioral automata, a model of initial conditions, models of said user requests, models of system response accuracy, an environmental model and dataflow and control flow which assemble said models together, and said skeleton validation environment covering all user requests and resultant system responses of said service",

in combination with the remaining elements and features of the claimed invention. It is for these reasons that the applicant's invention defines over the prior art of record.

### ***Conclusion***

17. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompanying the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is 571-272-3766. The examiner can normally be reached on Mon-Fri 10:00 am- 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Carlos Ortiz-Rodriguez  
Patent Examiner  
Art Unit 2123

September 27, 2010

/Paul L Rodriguez/  
Supervisory Patent Examiner, Art Unit 2123